



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/642,119	08/21/2000	Scott William King	U 012912-1	7742

7590

07/08/2003

Ladas & Parry
26 West 61st Street
New York, NY 10023

EXAMINER

WEST, LEWIS G

ART UNIT

PAPER NUMBER

2682

DATE MAILED: 07/08/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Gr

Office Action Summary

Application No.

09/642,119

Applicant(s)

KING ET AL.

Examiner

Lewis G. West

Art Unit

2682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-19 is/are allowed.
- 6) ☒ Claim(s) 1 and 20-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 0200 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6,8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hugenberg et al (US 5,924,039) in view of Kool et al (WO 95/31070).

Regarding claim 1, Hugenberg discloses a transmission network for communicating information at directional radio frequencies, said network comprising: a broadband network servicing a first area (202), and including a plurality of first and second transmitters, and a broadcast network (200) servicing a second area substantially overlaying the first area (col. 3 lines 54-62), and including a plurality of third and fourth transmitters, wherein the broadband network transmits in a first frequency band, and the broadcast network transmits in a second frequency band, the first frequency band being substantially the same as the second frequency band. (Col. 3 lines 62-col. 4 line 10), but does not expressly disclose the transmitters lying on orthogonal geographic axes. Bosch discloses the direction of transmission of a first and second transmitter lying substantially parallel to a first geographical axis, and the direction of transmission of a third and fourth transmitter lying substantially parallel to a second geographical axis, the second axis being orthogonal to the first axis (Page 5). Therefore it would have obvious to one of ordinary skill in the art at the time of the invention to position the transmitter on orthogonal axes to promote isolation and prevent interference.

Art Unit: 2682

Regarding claim 21, the combination of Hugenberg and Kool discloses a transmission network as claimed in claim 1, wherein the broadcast network is used for one-way broadcasting of information. (Col. 3 lines 41-52)

Regarding claim 22, the combination of Hugenberg and Kool discloses a transmission network as claimed in claim 1, wherein the broadband network is a two-way network. (Col. 3 lines 41-52)

Regarding claim 23, the combination of Hugenberg and Kool discloses a transmission network as claimed in claim 1, wherein the first and second transmitters are grouped into clusters, each cluster being connected to a broadband backbone through a single connection point. (Col. 5 lines 40-65)

Regarding claim 24, the combination of Hugenberg and Kool discloses a transmission network as in claim 1, wherein the first and second transmitters transmit at any one of a first, second, third or fourth frequency, the first, second, third and fourth frequencies being generated by horizontal and vertical polarization of a first frequency and a second frequency. (Col. 4 lines 11-26)

2. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hugenberg in view of Kool further in view of Bossard (US 4,747,160).

Regarding claim 20, the combination of Hugenberg and Kool discloses the system of claim 1, but does not expressly disclose infill cells for areas not covered by the networks. Bossard discloses infill cells (repeaters) that cover areas not covered by the regular network. (Col. 9 line 36-col. 10 line 48) Therefore it would have been obvious to one of ordinary skill in

Art Unit: 2682

the art at the time of the invention to include infill cells in order to cover areas that might otherwise be isolated due to geographical features.

Allowable Subject Matter

3. Claims 2-19 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 2, the prior art teaches directional radio networks using polarization for to increase frequency reuse and prevent interference. The prior art does not teach a transmission network for communicating information at directional radio frequencies, said network comprising: (a) a plurality of first, second, third and fourth cells, each first, second, third and fourth cell comprising: a first transmitter for transmitting radio frequency information in a first direction to define a first reception footprint substantially within the cell, the first transmitter being disposed at or adjacent a periphery of the cell, and, a second transmitter for transmitting radio frequency information in a second direction substantially opposed to the first direction to define a second reception footprint substantially overlapping the first reception footprint, the second transmitter being disposed at or adjacent the periphery of the cell at a position substantially opposed to the first transmitter, the first, second, third and fourth cells being generally circular or oval in plan, of similar size and transmitting at first, second, third and fourth frequencies respectively, the first transmitter of each first cell being disposed at or adjacent the second transmitter of an adjacent second cell, and the first transmitter of each third cell being disposed adjacent the second transmitter of an adjacent fourth cell, the plurality of cells being arranged such that the first and second directions, in which the first and second transmitters

Art Unit: 2682

respectively transmit, are parallel; (b) a first rectangular array of the first and second cells, the periphery of each first and second cell abutting the peripheries of respective surrounding first and second cells, wherein rows of the first rectangular array in a direction parallel to the first and second directions comprise alternating first and second cells, and each of the rows of the first rectangular array orthogonal to the first and second directions includes either first or second cells, and (c) a second rectangular array of the third and fourth cells, the periphery of each third and fourth cell abutting the peripheries of respective surrounding third and fourth cells, wherein rows of the second rectangular array in a direction parallel to the first and second directions comprise alternating third and fourth cells, and each of the rows of the second rectangular array orthogonal to the first and second directions includes either third or fourth cells, wherein the cells of the second rectangular array are displaced with respect to the cells of the first rectangular array by approximately the radius of a cell in the first direction, and by approximately the radius of a cell in a direction orthogonal to the first direction.

Claims 3-19 depend directly or indirectly from the allowable claim 2 and are therefore allowable because they incorporate all the limitations of the base claim and any intervening claims.

Conclusion


4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Boch et al (US 6,445,926) and Myers (US 6,304,762) and Langston (US 6,006,069) are cited as relevant to cell planning using frequency, directional and polarization diversity.

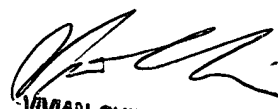
Art Unit: 2682

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lewis G. West whose telephone number is 703-308-9298. The examiner can normally be reached on Monday-Thursday 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 703-308-6739. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.


Lewis West
(703) 308-9298
June 26, 2003


VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600
6130103